



Cardiovascular Commentary

Continuous Ambulatory Wireless Cardiac Monitoring: A Screening Tool for Cardiac Rhythm Disorders

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This commentary is written in response of the article, “Screening of Cardiac Rhythm Disorders in Women Working at Information Technology Sector Using Continuous Ambulatory Wireless Cardiac Monitoring – A Community-Based Study”, that was published in issue 1 of 2023 of Indian Journal of Cardiovascular Disease in Women.^[1] This study was a cross-sectional study that was taken up in workplace setting, to screen women for cardiac rhythm disorders using wireless continuous ambulatory cardiac monitoring. A standardized questionnaire was used to access several risk factors and work-related stress. Differences in ECG parameters such as heart rate, heart rate variability (HRV), and frequency corrected QT (QTc) were compared on working and non-working days. The study shows the combination of the need for the screening tool in younger age groups and lifestyle factors with more elucidation of work-related stress on autonomic cardiac function.

It is time to revisit the situation where these “generation Z” women are at a higher risk of acquiring cardiac arrhythmias. There is a growing interest in differences in epidemiology and preventive strategies such as screening and early diagnosis by sex. Moreover, these impediment strategies have been underrepresented globally.

Improvements in artificial intelligence have geared up arrhythmia measurement through wireless continuous remote sensor monitoring, relieving cumbersome procedures, and enabling the use of this in the form of a patch as a screening tool.

The epidemiological transition in India in the past two decades has been dramatic; in a short timeframe, the predominant epidemiological characteristics have transitioned from infectious diseases, diseases of under-nutrition, and maternal and childhood diseases to non-communicable diseases.^[2] India in 2016, cardiovascular diseases (CVDs) contributed to 28.1% of total deaths and 14.1% of total disability-adjusted life years compared with 15.2% and 6.9%, respectively, in 1990.^[3] CVD is a major public health problem in India, often impacting the most productive years of an individual's life.^[4] The incidence of arrhythmias in the younger generation is increasing and is occurring in premenopausal women.^[5] In addition to gender differences in presentation, higher comorbidity associations, sedentary lifestyle, increased alcohol consumption due to acculturation, work stress, and the ability to balance home and work may all be important risk factors. Emotional factors may exhibit both substrate and triggering relationships with arrhythmia and also influence the risk of acquiring arrhythmia by affecting the stability of repolarization by prolonging the QTc interval.^[6] An anecdotal risk factor, the COVID-19, has been recently added to the list of risk factors, and the pooled systematic review data have offered the findings of a significant association with an increased risk of poor outcome being observed

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in 19% of patients with the COVID-19 and in 48% of patients with the COVID-19 and poor outcomes.^[7]

The study done by Dr. Sudha Bala and the team in the current issue accelerates women-specific research in arrhythmia. The research utilizes an innovative screening technique for cardiac rhythm disorders. The study also focuses on the novel risk factor of COVID-19 and its association with cardiac rhythm disorders in females engaged in the IT sector while specifically emphasizing the impact of work stress, which clearly paves the way for further research studies. The study highlights alcohol usage to be significantly associated with cardiac arrhythmias in women of the IT sector. This study sets the foundation for future research pertaining to cardiac rhythm disorders specially addressing working women in different sectors and the need for multi-level disciplinary to strengthen the evidence-based medicine.

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